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**Patent** 

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Phoenix, Arizona

Applicant:

Samuel Villareal

Group:

2828

Serial No.:

10/028,435

**Examiner:** 

Dung T. Nguyen

Filed:

09/04/2002

Atty Docket No.:

H0003010 US

For:

ASYMMETRIC DISTRIBUTED BRAGG REFLECTOR FOR

**VERTICAL CAVITY EMITTING LASERS** 

## **INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents POB 1450 Alexandria, VA 22313-1450

Dear Sir:

The following sections are being submitted for this Supplemental Information Disclosure Statement:

## 1. Preliminary Statements.

Applicant(s) submits herewith patents, publications or other information as the result of an International Search Report, that they believe may be material to the patentability of the claims under consideration in this application and in respect of which there may be a duty to disclose under 37 C.F.R. § 1.56.

The filing of this Information Disclosure Statement shall not be construed as a representation that a search has been made (37 CFR § 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56 (37 C.F.R. § 1.97(h)), or that no other material information exists.

The filing of this Information Disclosure Statement is not to be construed as a representation that the references are prior art within the meaning of 35 U.S.C. §§ 102 or 103. Further, any explanation, if provided, is not to be construed as a representation that the references have been thoroughly reviewed. In particular, no representation as to the relevance of any portion of any reference is intended.

The filing of this Information Disclosure Statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

- 2. Form PTO-1449, List of Prior Art Cited by Applicant, citing one U.S. patent, one foreign patent, and four publications.
- 3. Attached to this Information Disclosure Statement is a copy of the International Search Report in the corresponding International Application, along with the cited references, for consideration by the U.S. Patent and Trademark Office. Copies of the references listed in the International Search Report that have not been provided are believed to define the general state of the art and are not considered to be of particular relevance.
- 4. Statement in accordance with 37 C.F.R. § 1.97(e):
  - (1) Each item of information contained in the Information
    Disclosure statement was first cited in any communication from a
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    three (3) months prior to the filing of the Supplemental Information
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  - (2) No item of information contained in the Information Disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the Supplemental Information Disclosure statement was known to any individual designated in § 1.56(c) more than three months prior to the filing of the Supplemental Information Disclosure statement.
- 6. The person making this statement is the attorney who signs below on the basis of the information supplied by the inventor(s) and the information in the attorney's file.

No fee is due, as this Information Disclosure Statement is submitted before the mailing of the first office action.

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#### CERTIFICATE OF MAILING

Thereby certify that this correspondence (along with any paper referred to as being attached or enclosed) is being deposited on the date shown below addressed to the Commissioner for Patents, Box Issue Fee, POB 1450, Alexandria, VA, 22313-1450:

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## Approved for use 10-31-99. OMB 0651-0031

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	Substitute for form 1449A-PTO	COMP	PLETE IF KNOWN	
•	INFORMATION DISCLOSURE	Application Number	10/028,435	
		Filing Date	12/28/2001	
	STATEMENT BY APPLICANT	First Named Inventor	Samuel S. Villareal	
Ö,	(USE AS MANY SHEETS AS NECESSARY)	Group Art Unit	2828	
r	9 200 OSheet 1 Of 2	Examiner Name	Dung T. Nguyen	
MAR 0	ZULUA CSINEET 1 01 Z	Attorney Docket Number	H0003010 US	
<b>A_</b>	.0/			

DEMA	U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines where relevant passages or relevant figures appear
		Number	Kind Code <sup>2</sup> (if known)			,
		6301281	B1	Deng Hongyu	10-09-2001	
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	FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No.1	Fo	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines where relevant passages or relevant figures appear	Τ <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)	·			
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MAR D	NFORMATION DISCLOSURE STATEMENT BY APPLICANT	
S.	(USE AS MANY SHEETS AS NECESSARY)	
TRAT	Sheet 2 Of 2	

COMPLETE IF KNOWN	
Application Number	10/028,435
Filing Date	12/28/2001
First Named Inventor	Samuel S. Villareal
Group Art Unit	2828
Examiner Name	Dung T. Nguyen
Attorney Docket Number	H0003010 US

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published	Т
		Notification of Transmittal of the International Search Report or the Declaration, dated Feb. 17, 2004, relative to PCT. Application No. PCT/US02/39528, the foreign equivalent to the instant U.S. Application 10/028,435	٧
		SUGIMOTO M ET AL: "VERY LOW THRESHOLD CURRENT DENSITY IN VERTICAL-CAVITY SURFACE-EMITTIN LASER DIODES WITH PERIODICALLY DOPED DISTRIBUTED BRAGG REFLECTORS" ELECTRONIC LETTERS, IEE STEVENAGE, GB, VOL. 28, NO. 4, 13 FEBRUARY 1992 (1992-02-13) PAGES 385-387, XP000292299 ISSN: 0013-5194	
		CHALMERS S A ET AL: "LOW RESISTANCE WAVELENGTH-REPRODUCIBLE P-TYPE (AL,GA) AS DISTRIBUTED BRAGG REFLECTORS GROWN BY MOLECULAR BEAM EPITAXY" APPLIED PHYSICS LETTERS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US VOL. 62, NO. 14, 5 APRIL 1993 (1993-04-05), PAGES 1585-1587, XP000355000 ISSN: 0003-6951	
		MIZUTANI A ET AL: "MOCVD GRWON InGAAS/GAAS VERTICAL CAVITY SURFACE EMITTING LASER ON GAAS (311) B SUBSTRATE' ELECTRONICS LETTERS, IEE STEVENAGE, GB, VOL. 33, NO. 22, 23 OCTOBER 1997 (1997-10-23), PAGES 1877-1878, XP006008126 ISSN: 0013-5194	
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